



Service Manual

TELEVISION SET
WITH 32" 16:9 TFT LCD PANEL

Model : TFTV3225S2

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◆ Notes For Installation

This television set with 32" FT LCD panel, is designed mainly for receiving ATSC/NTSC system TV source, or other sources such as DVD player and personal computer (TFDVD3295S2 Model), via all different kinds of cables. This section provides some guidelines for assembly and preparation of a finished display solution.

Preparation : Before proceeding, it is important to familiarize yourself with the parts making up the TV Set and the various connectors, mounting holes, and general layout of the TV Set. All connectors have their own number printed on the PCB board. And their signal arrangements are shown in the following relevant sections.

4 LCD Panel : This TV Set has 12V, LVDS interface logic on the main board, for 32" TFT LCD panel. Due to the different signal timing and electrical characteristics from each LCD panel manufacturer, we need to use different Firmware, different LCD interface cable for LCD panel even on the same board.

Inverter : Each LCD panels have their own inverter to obtain optimum performance and long lifetime. Because, Each LCD panel makers use different type of back light tubes for their all different models and inverter drives the tubes directly.

The main board of this TV Set just supplies the power for inverter logic and controls a light On/off signal and a brightness control signal. So, it is important to use the inverter that has proper driving capacity and control input signal. Generally speaking, the inverter is attached to TFT LCD panel, you should contact with panel maker for any problem with the inverter.

Inverter cable : This cable supplies Inverter's power, an on/off control signal and a brightness control signal to the inverter.

OSD Button : See Operational Function section.

3 Color LED : This LED shows the state of TV Set.

- Green – Normal state
- Red – Stand-by mode

AC power input : 100Vac~240Vac(50/60Hz) is required to supply enough power for the TV Set.

◆ Specification

✧ Electrical Specification

a. Power Consumption: (Include Inverter and LCD Panel)

Operation mode

Power Consumption : 32" 150 Watt(Max)

Audio AMP : 9 +/-1 Watt (Reference : Speaker 9Wx2)

Power Saving mode (STB) : ≤ 1 Watt

b. Power Supply

Input for Main board : +12/5Vdc

Output for LCD Panel :32" 12Vdc

c. Environment

Operation Temperature : 0° ~ 45°

Storage Temperature : -20° ~ 70°

Operation Humidity : 0%~80% (non-Condensing)

Storage Humidity : 0%~90%

d. Output Data Type

LDVS mode : 8bit data output.(single LVDS output)

e. Input Refresh Rates : fH: 30~60KHz, fV: 60~75Hz

✧ Power Board Specification

a. AC Input Requirements

Normal Voltage : 100 to 240 Vrms

Voltage Range : 90 to 264 Vrms

b. Frequency

Normal Frequency : 50 to 60 Hz

Frequency Range : 45 to 65 Hz

Pin-CON15 Connection to main board

NO.	PIN Connection	Function
9,10	+12V	For tuner power and amp
6,7	+5V	For scaler power and decoder power
4,5,8,11,12	GND	+12/5Vdc return
1	ON/OFF	Work / standby mode (H working, L standby)
2,3	+5VSB	MCU +5V, in standby power

Pin-CON3 for inverter PUB

NO.	PIN Connection	Function
1,2	GND	For tuner power and amp
3	ADJ	Adjust backlight
4	ON/OFF	Cut on/off panel backlight
5,6	+12 (out put)	For inverter power

✧ Television Part

Item		Specification
	TV SYSTEM	ATSC/NTSC
	CAPTION CLOSED	YES
	Parental Control	YES
	PIP/POP	NO
SOUND	TV SYSTEM	STEREO/MONO
	SOUND OUTPUT	9W X 2
	ASP	YES
	EFFECT	No
EXT. TERMINAL	COMPONENT 1 (YPbPr)	Y/Pb/Pr INPUT
	AV IN	VIDEO, Y/C INPUT AUDIO L/R INPUT
	PHONES	YES
	TUNER	DIGITAL+Analog tuner(TCL)
	VGA(PC) IN	VGA(Analog RGB) INPUT PC-AUDIO(L/R) INPUT
HDMI IN		DIGITAL AUDIO AND VIDEO (VIDEO AT RESOLUTION UP TO 1080P)

✧ RGB (PC-VGA15) Part

a. Features of Analog RGB Part

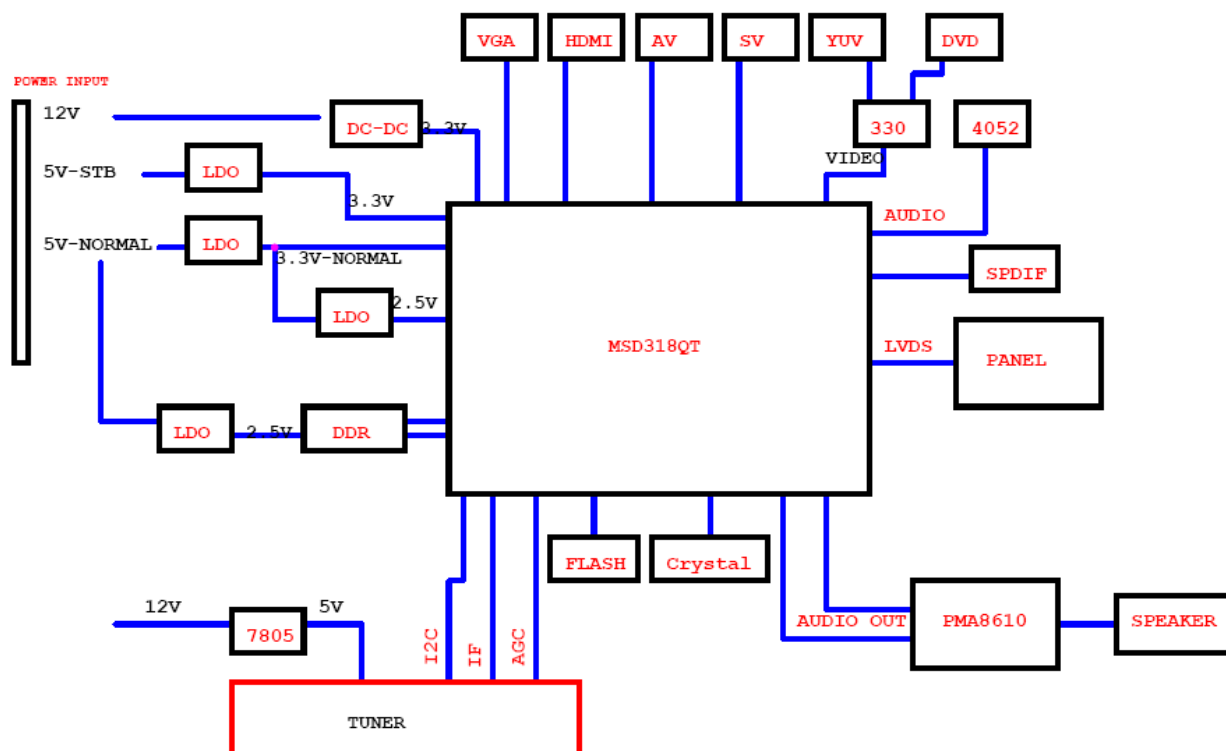
- . Horizontal Rate: 31KHz ~ 60KHz
- . Vertical Rate: 43 ~ 85Hz
- . Maximum Pixel Rate: 78.75MHz
- . Resolution Maximum: 32" 1280 x 1024
- . Color Maximum: 262,114/16.7M(option)
- . Sync type: H & V separate
- . Plug & Play: YES DDC

b.

This board can detect all VESA standard Graphic modes (for Analog RGB) shown on the table below and provide more clear and stable image on a screen.

Standard	Format	Total Pixels x Total Lines	Horizontal rate (KHz)	Pixel Clock Rate (MHz)
VGA	720 x 400p 70 Hz	900 x 449	31.5	28.0
	640 x 480p 60 Hz	800 x 525	31.5	25.2
	640 x 480p 67Hz	864 x 525	35.0	30.0
	640 x 480p 72 Hz	832 x 520	37.9	31.5
	640 x 480p 75 Hz	840 x 500	37.5	31.5
SVGA	800 x 600 56 Hz	1024 x 625	35.2	36.0
	800 x 600 60 Hz	1056 x 628	37.9	40.0
	800 x 600 72 Hz	1040 x 666	48.1	50.0
	800 x 600 75 Hz	1056 x 625	46.9	49.5
	832 x 624 75 Hz	1152 x 667	49.7	57.5
XGA	1024 x 768 60 Hz	1344 x 806	48.4	65.0
	1024 x 768 70 Hz	1328 x 800	56.4	75.0
	1024 x 768 75 Hz	1312 x 800	60.0	79.0
SXGA	1280 x 1024 75 Hz	1688 x 1066	39.2	135.0
	1152 x 870 75 Hz	1456 x 916	68.9	100.0

◆ Block Diagram



Note:

- 1) The flash's capability will be 32 mb(4MB) while adopt firmware which is more effective and stable
- 2) The Tuner may also be used with DA58CT-6-E.
- 3) Key & IR part will be divided into three PCB boards. A IR PCB board, a light board (standby mode is blue low-light, the work mode does not shine or high-lights, you can press the light button on the remote control to select the low-light or high-light), another piece of the key board.

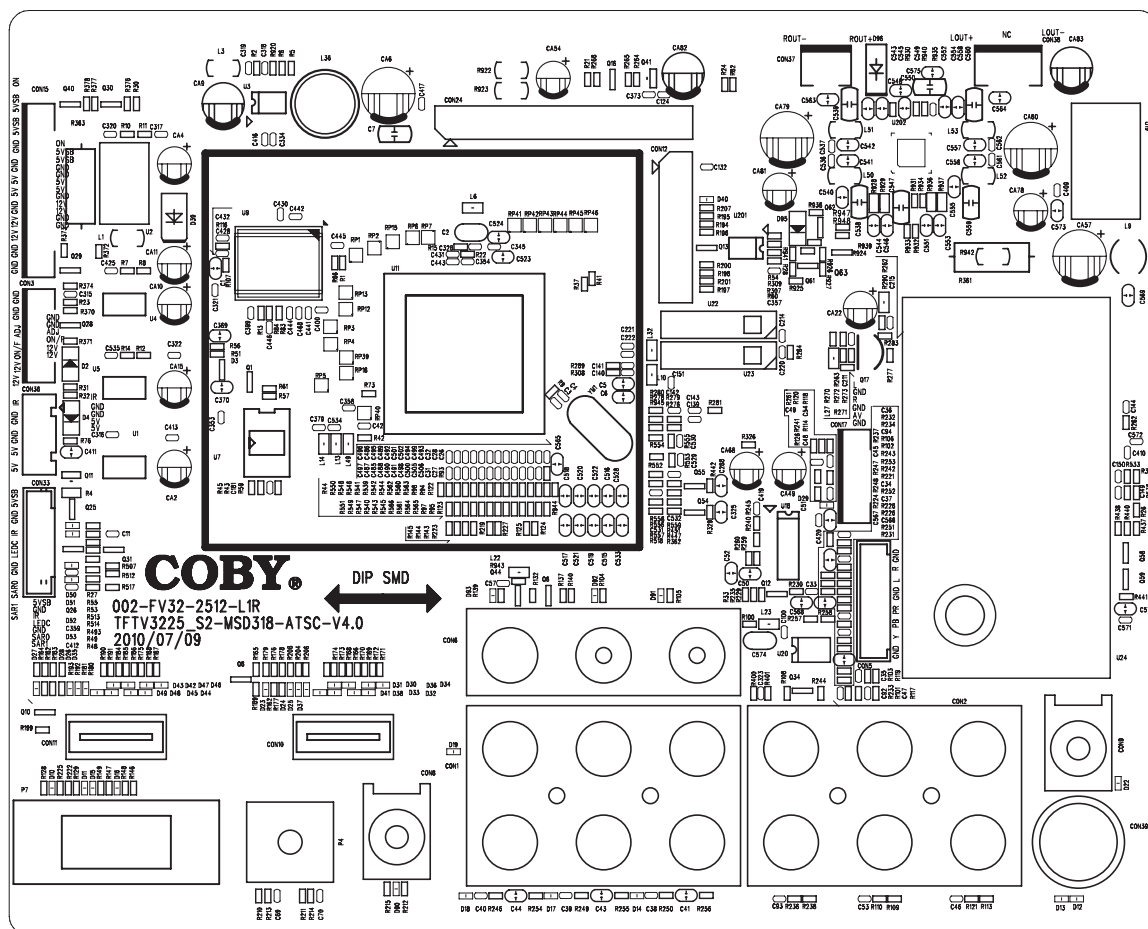
Note:

The TFTV MODEL is supplied by Coby, you can contact with COBY service department

◆ PCB Mechanical Dimension

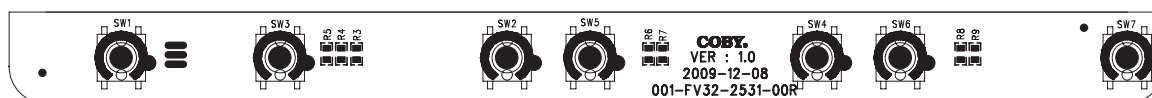
TV main board:

a. TOP Pattern:

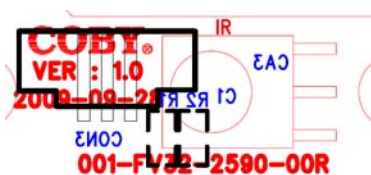


✧ Key & IR Board Component

a. Key Pattern



b. IR Pattern



◆ Board Connectors Pin Assignment

a. CON24: 40 Pin define for Connector to Panel (NC 36 or 40 PIN, On Main Board):

LCD panel for example: SAMSUNG 32" panel

PIN	Description	PIN No.	Description
1	GND	21	RXE2+
2	GND	22	RXE2-
3	RX00+	23	RXEC+
4	RX00-	24	RXEC-
5	RX01+	25	RXE3+
6	RX01-	26	RXE3-
7	RX02+	27	RXE4+
8	RX02-	28	RXE4-
9	RX0C+	29	GND
10	RX0C-	30	GND
11	RX03+	31	GND
12	RX03-	32	GND
13	RX04+	33	VCC
14	RX04-	34	VCC
15	GND	35	VCC
16	GND	36	VCC
17	RXE0+	37	IIC-SCL
18	RXE0-	38	IIC-SDA
19	RXE1+	39	GND
20	RXE1-	40	GND

b. CON33: Connector from Main Board to IR Board (5PIN, On Main Board)

PIN	Symbol	Description
1	5VSB	Power Supply of IR Board +5V (standby 5V)
2	GND	Power Supply of Ground
3	IR	IR Receive
4	LED	Interrupt Input of Remote Controller (low-light $\geq 2.6 \sim 2.7V$, High-light $> 3V$, not light $< 2.5V$)
5	GND	Power Supply of Ground
6	SAR0	Key select pin Connect (The connected voltage: 0V/0.55V/1.1V/1.65V, not connected voltage: 3.3V)
7	SAR1	Key select pin Connect (The connected voltage: 0V/0.55V/1.1V/1.65V, not connected voltage: 3.3V)

c. CON37/38: Connector from Main Board to Left/right Speaker (4PIN, On Main Board)

PIN	Symbol	Description
CON37 1	R+	Driving the Right Speaker(+)
CON37 2	R-	Driving the Right Speaker(-)
CON38 1	L-	Driving the Left Speaker(-)
CON38 2	NC	NC
CON38 3	L+	Driving the Left Speaker(+)

d. P7: Connector of VGA(P-Scan) Input (15Pin, On Main Board)

PIN	Symbol	Description
1	R	Analog Red Channel
2	G	Analog Green Channel
3	B	Analog Blue Channel
4	NC	No Connection
5	GND	Power Supply of Ground
6	R-GND	Ground Return of Analog Red Channel
7	G-GND	Ground Return of Analog Green Channel
8	B-GND	Ground Return of Analog Blue Channel
9	VGA5V	Power Supply of +5V
10	GND	Power Supply of Ground
11	NC	No Connection
12	VGA-SDA	I ² C Bus serial data input/output (For VGA)
13	A-HS	Horizontal Sync Signal of Analog RGB
14	A-VS	Vertical Sync Signal of Analog RGB
15	VAG-SCL	I ² C Bus serial clock input (For VGA)

Please refer to *High-Definition Multimedia Interface Specification Version 1.3a*, for define of all of the Pins above **p4:PHONES Connector of PC-Audio INPUT**

PIN	Symbol	Description
1	PC-L	PC-Audio Left Channel
2	PC-R	PC-Audio Right Channel

e. CON10/11: Connector of HDMI (19pin) Input

Type A pin	Signal Name	Wire	Type A pin
1	TMDS Data2+	A	1
2	TMDS Data2 Shield	B	2
3	TMDS Data2–	A	3
4	TMDS Data1+	A	4
5	TMDS Data1 Shield	B	5
6	TMDS Data1–	A	6
7	TMDS Data0+	A	7
8	TMDS Data0 Shield	B	8
9	TMDS Data0–	A	9
10	TMDS Clock+	A	10
11	TMDS Clock Shield	B	11
12	TMDS Clock–	A	12
13	CEC	C	13
14	Reserved (in cable but N.C. on device)	C	14
15	SCL	C	15
16	SDA	C	16
17	DDC/CEC Ground	D	17
18	+5V Power	5V	18
19	Hot Plug Detect	C	19

f. CON17: Connector of Component-AV

PIN	Symbol	Description
6	CND	VIDEO Input
5	CVBS	Right Channel Audio Input
4	CND	Side AV
3	R	Right Channel Audio Input
2	CND	Side AV
1	L	Left Channel Audio Input

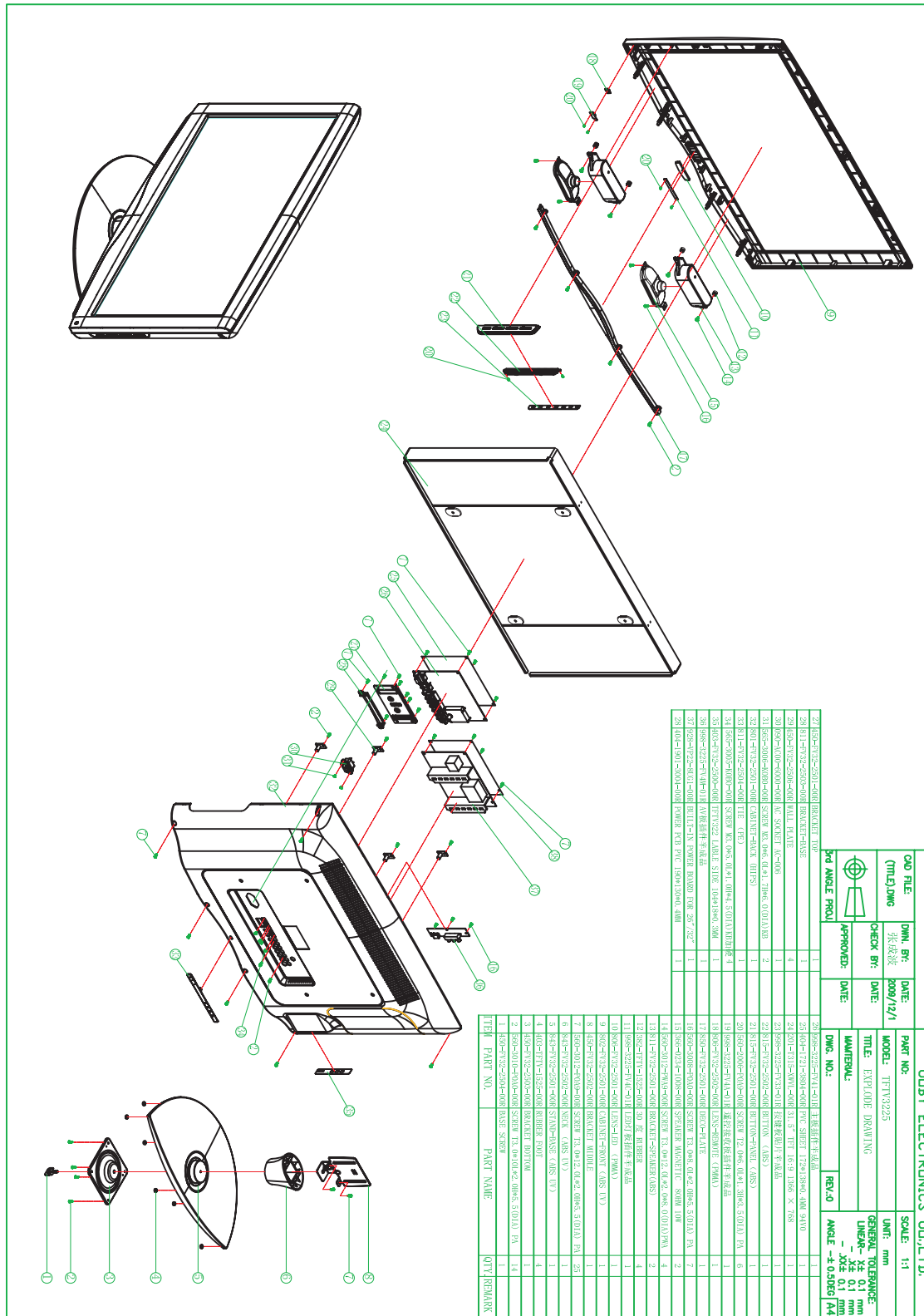
g. CON39: Connector of Component-S-Video
h. CON 1: Connector of Component-Y/PB/PR / Y2/PB2/PR2

i. CON 2: Connector of Y/Pb/Pr-RL / Y2/Pb2/Pr2-RL

j. CON 5: Connector of DVD Y/Pb/Pr-RL(for TVDVD3295 model)

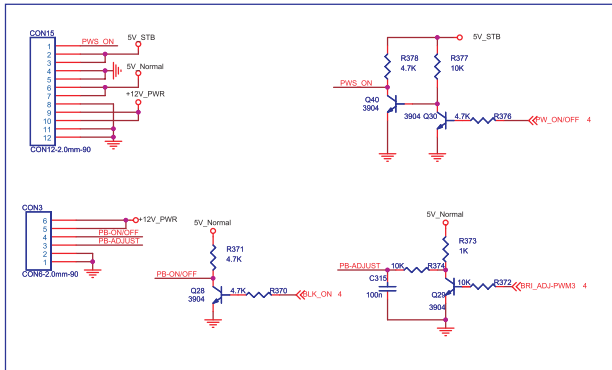
PIN	Symbol	Description
1	GND	Ground
2	R	DVD R
3	L	DVD L
4	GND	Ground
5	Pr	DVD Y/Pb/Pr
6	Pb	DVD Y/Pb/Pr
7	Y	DVD Y/Pb/Pr
8	GND	Ground

◆ Exploded View

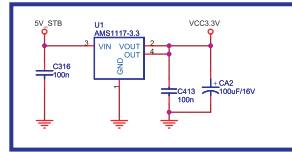


◆ Schematic

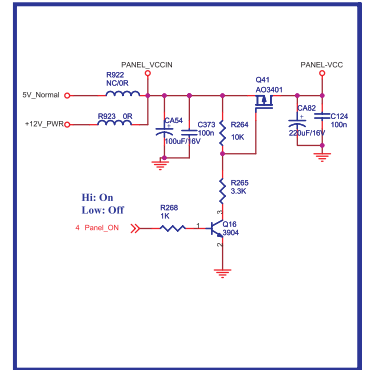
Power Connector



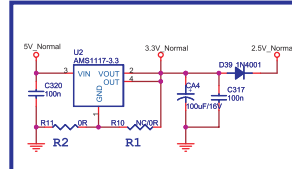
3.3V Power_Standby



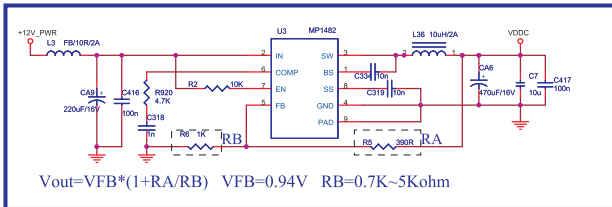
Panel Power



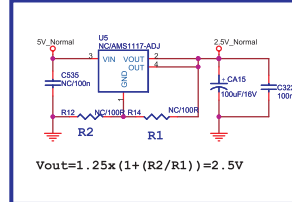
3.3V Power_Normal



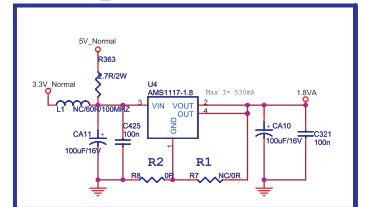
1.2V Core Power



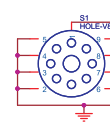
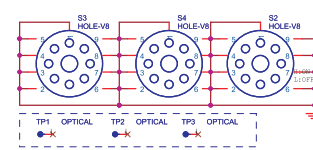
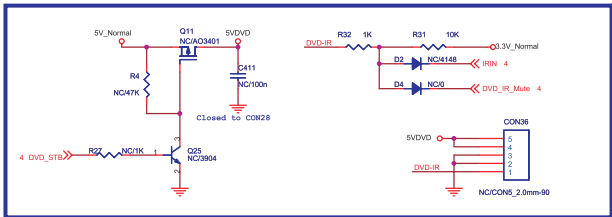
2.5V Power Normal



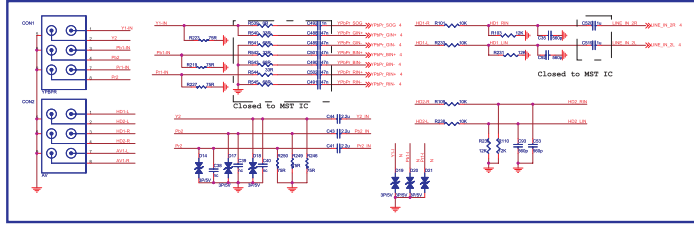
1.8V Power_Normal



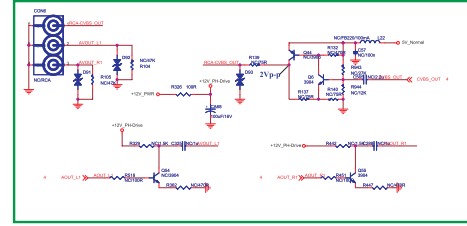
DVD Power



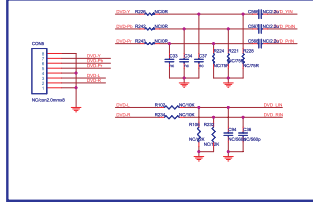
YPbPr INPUT



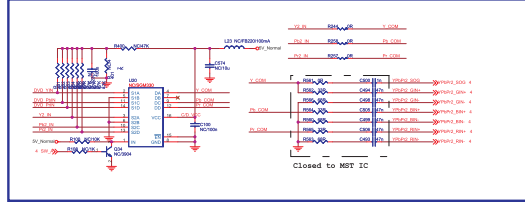
Audio out



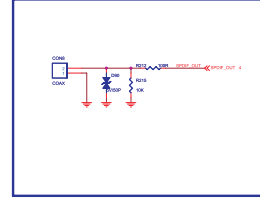
DVD INPUT



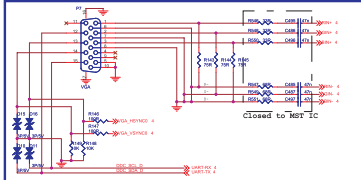
DVD/YUV SWITCH



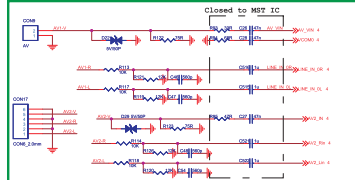
COAX out



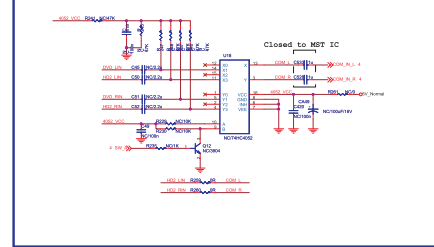
D-SUB IN



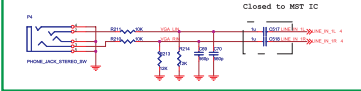
AV INPUT



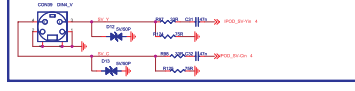
AUDIO SWITCH



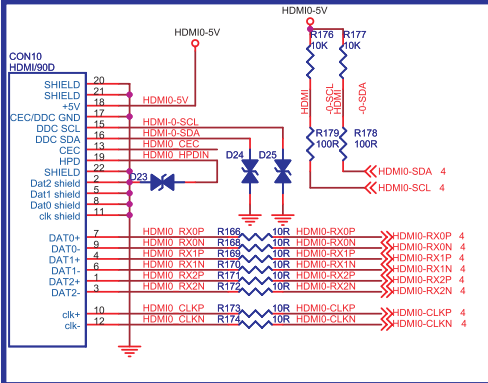
VGA Audio IN



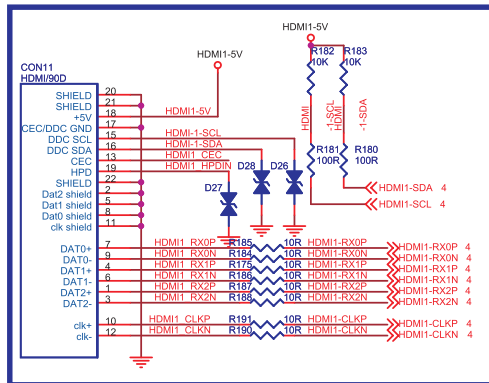
S-V INPUT



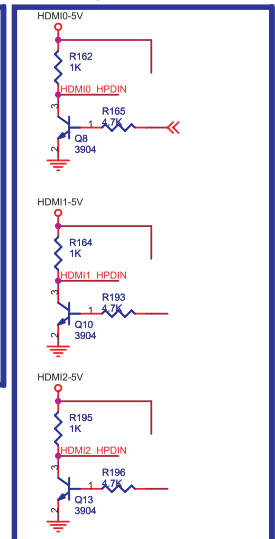
HDMI Connector



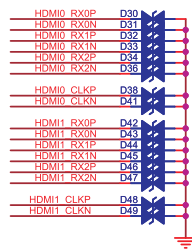
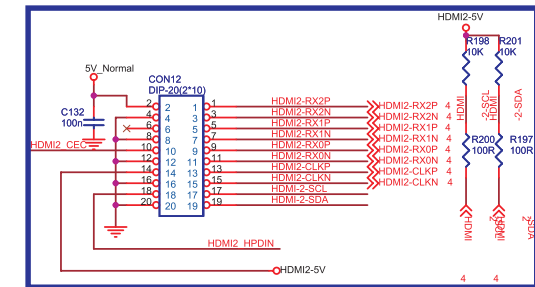
HDMI Connector



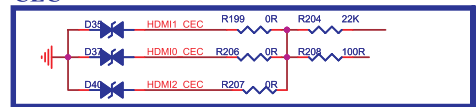
Hot-Plug Control

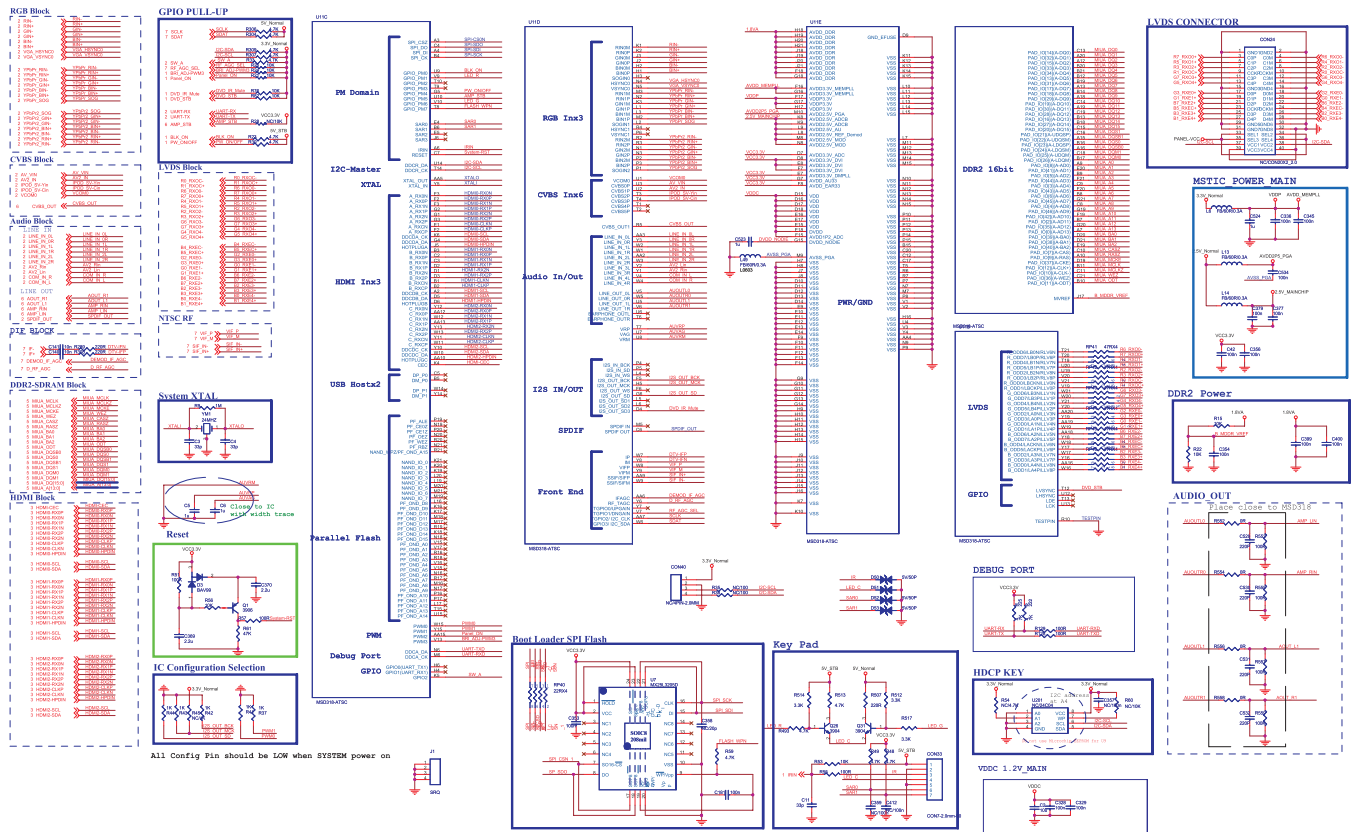


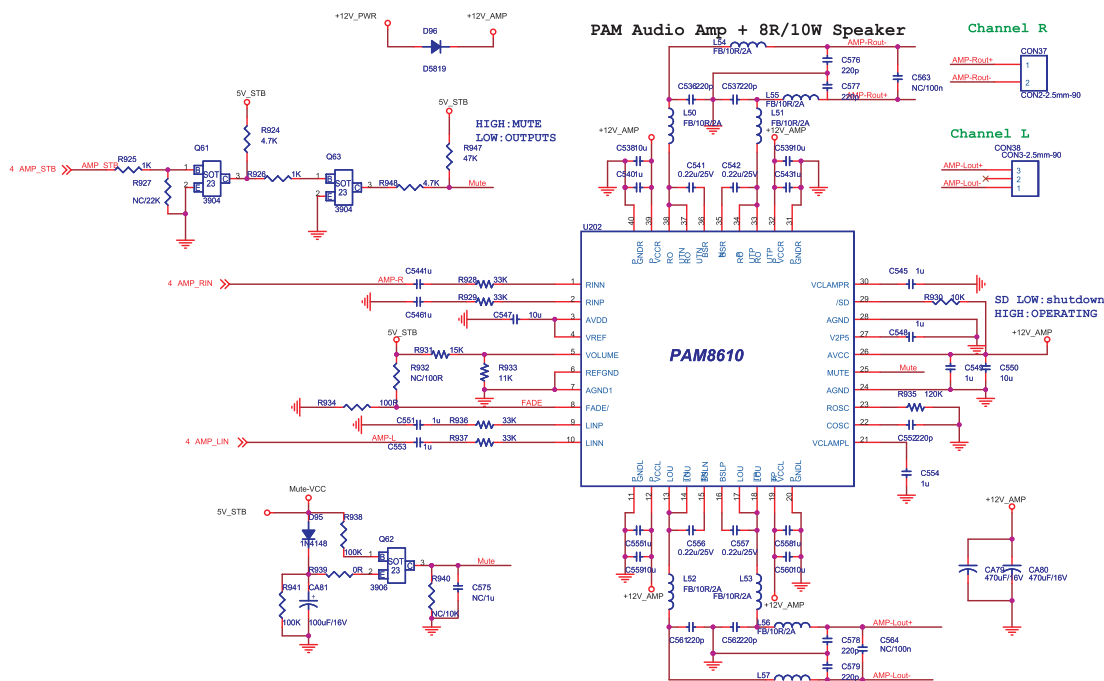
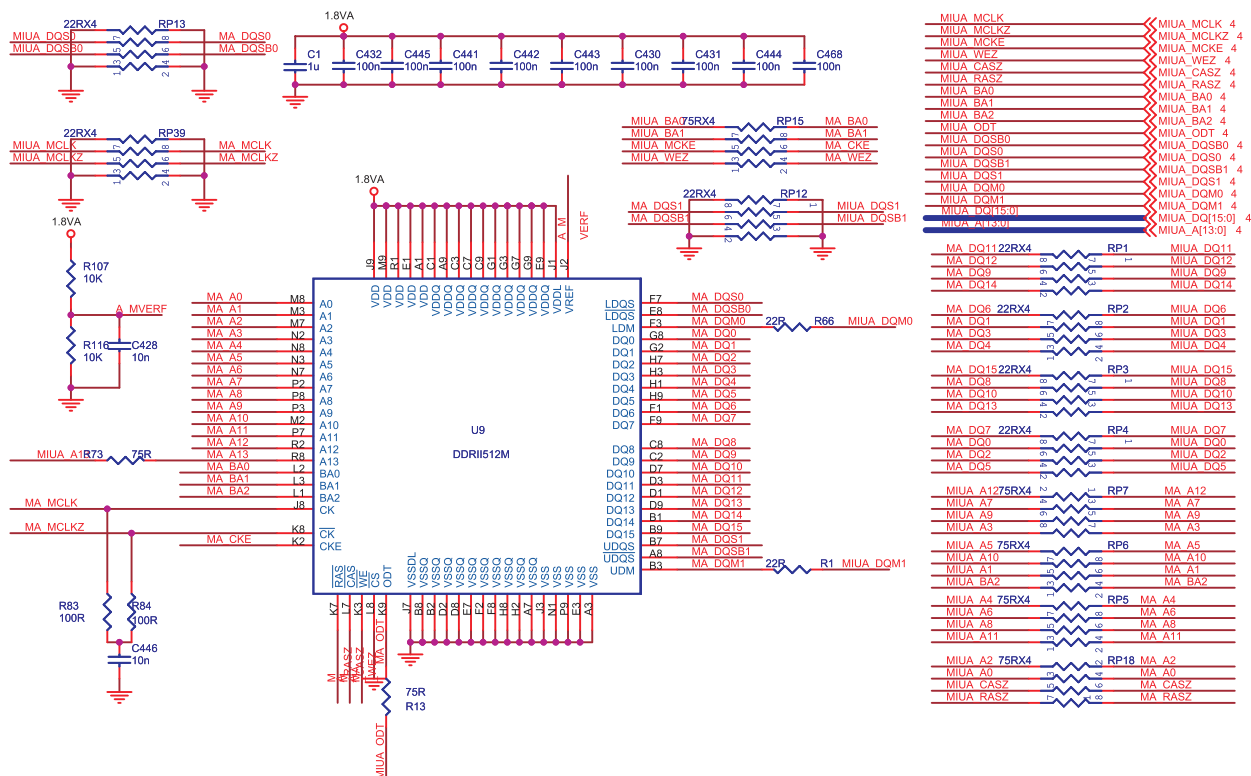
HDMI 3 Connector

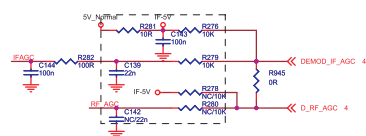
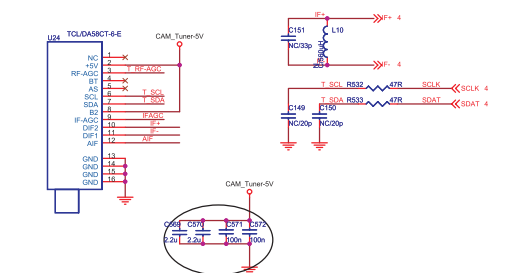


CEC

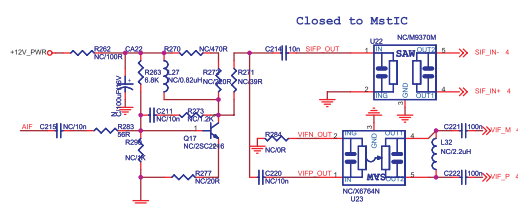
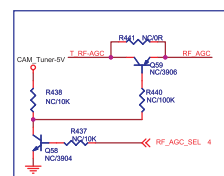




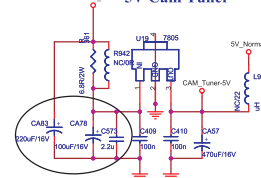




RF AGC Switch

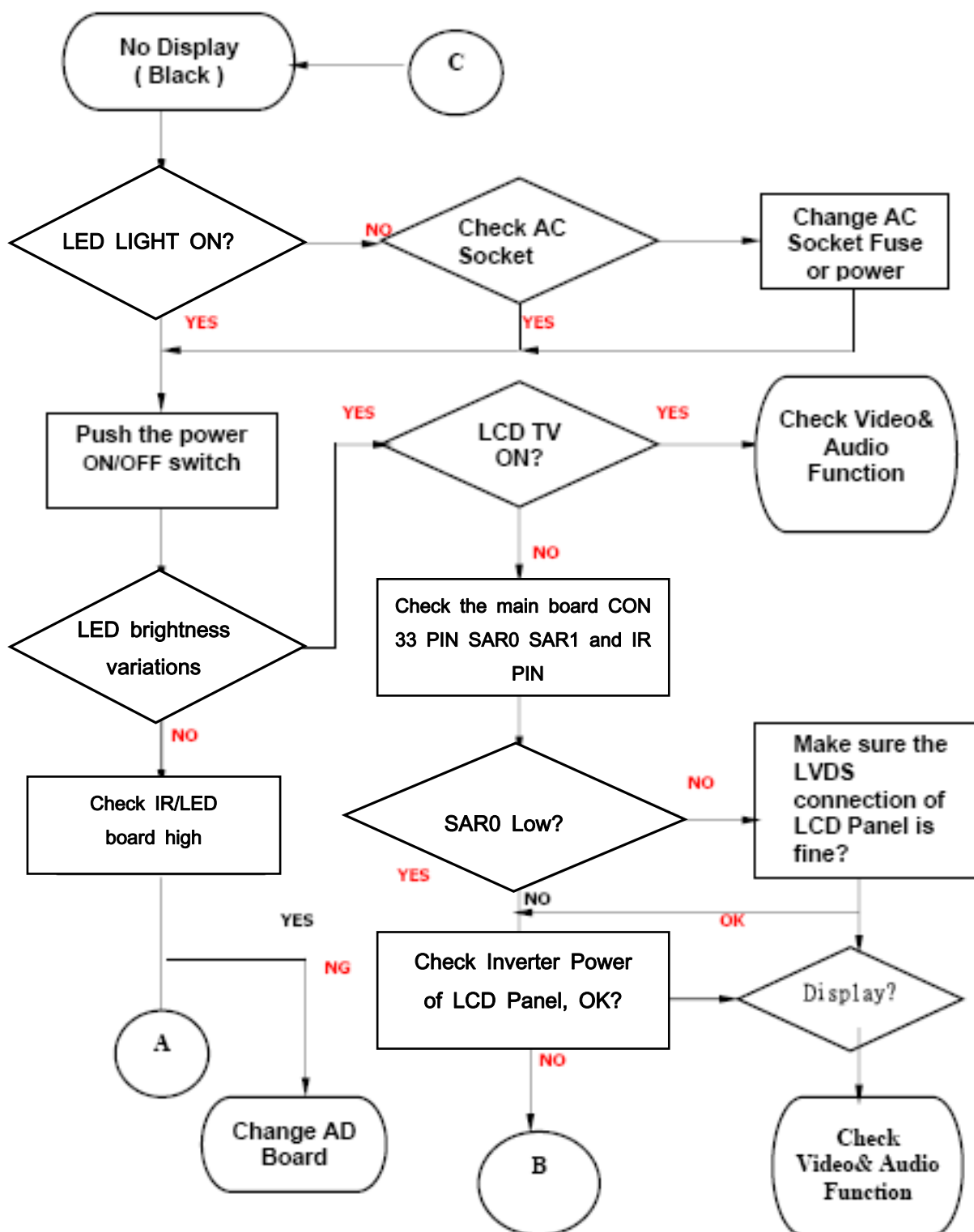


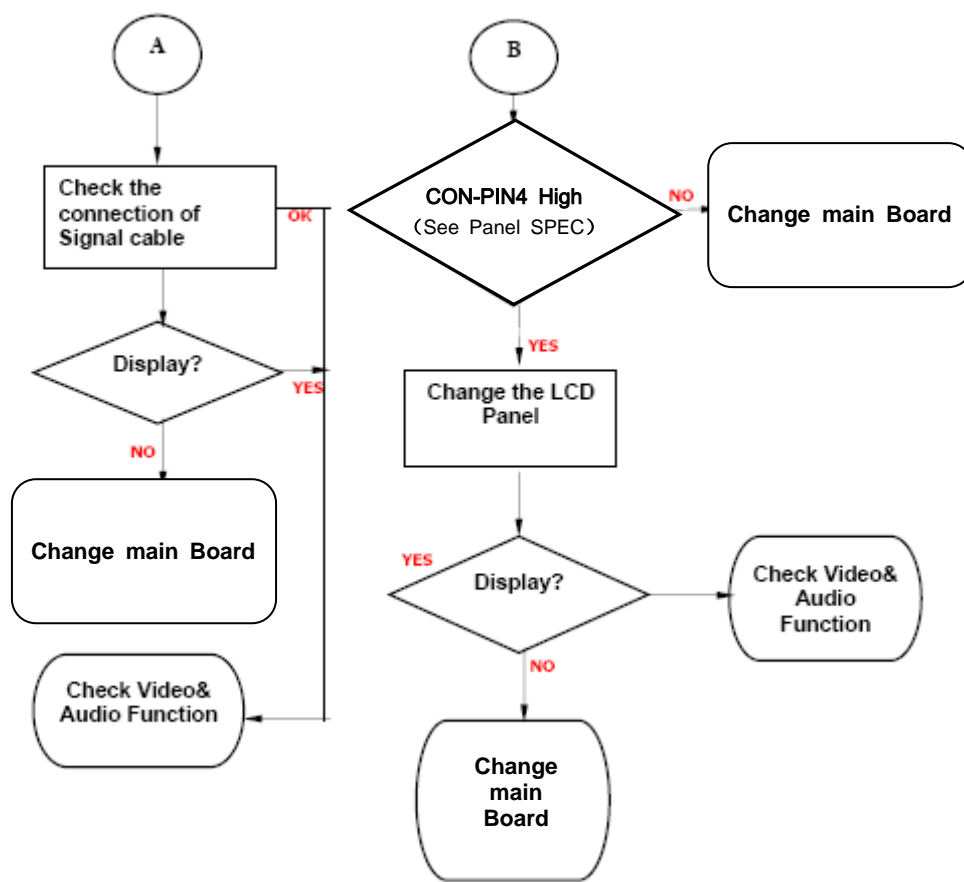
+12V_PWR 5V Cam Tuner



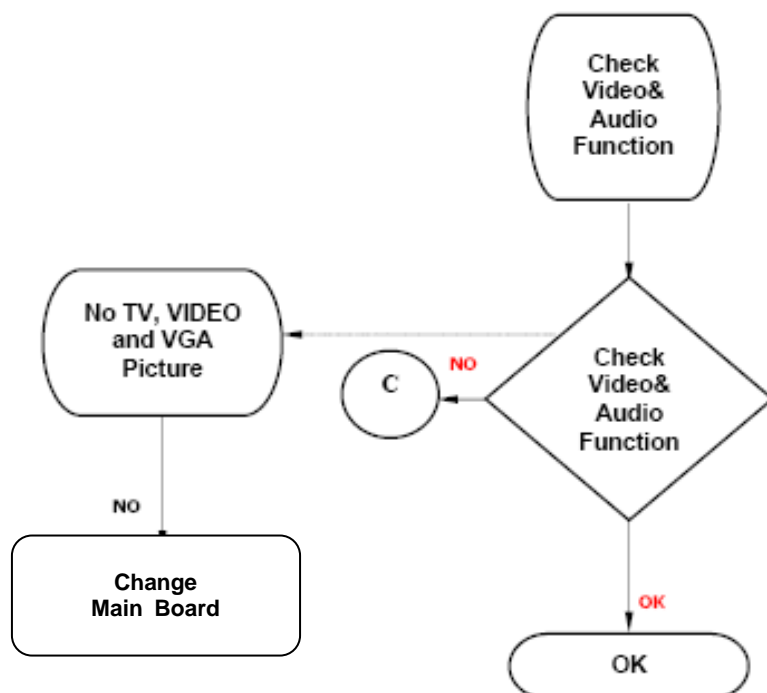
◆ Trouble Shooting Flow Chart

Step 1





Step 2



Step 3

